Session	Poster Session
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METALLIC GLAZES FOR PORCELAIN FLOOR TILES

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Recently, porcelain tiles decorated with metallized coatings have proved extremely popular. In the Republic of Belarus, imported metallic glazes are used in the production of ceramic granite tiles. Dependent of producers on imports puts a premium on the developing of glaze compositions using existing local raw materials. This will ensure import substitution and reduction in the cost of production. In this study, a glaze system consisting of CuO, dolomite, fusible clay, quartz sand and kaolin is systematically developed to produce raw metallic glazes for stoneware bodies. The study of physical-chemical properties founded that, synthesized glaze coatings conformed to requirements of technical standards documents, as well as had high decorative effect: color – dark gray, metallic effect; surface texture – glossy, semi-matte; luster – 40–100 %; microhardness – 5100–7500 MPa; the linear thermal expansion coefficient – (65.9–73.4)·10–7 K–1; heat resistance – 150–200 °C; class of surface abrasion resistance – 2. In addition, all glaze coatings were chemically stable. The following crystalline phases were identified in the glazes anortite (CaO · Al2O3 · 2SiO2) and tenorite (CuO). The tests performed under production plant conditions at Keramin JSC (Minsk, Republic of Belarus) showed that the newly developed coatings can be used in industrial manufacturing.

Keywords: *metallic glaze, porcelain floor tile, crystalline phases, structure, abrasion resistance*